TROPICAL RAINFALL MEASURING MISSION

April 10, 2000 - April 16, 2000
DOY 101 - 107
Day of Mission 865 - 871

TRMM MISSION OPERATIONS

- TRMM is flying in the -X Forward direction as of 00-091, at 05:12:21z.
- Yaw maneuver #40 is scheduled for April 20th (00-111).
- Delta-V maneuver #185 is scheduled for April 17th (00-108), using the ISP thrusters.
- The Beta angle range for 00-108 through 00-114 is -14.9° to 15.0°.
- The next Monthly Status Review is scheduled for May 3rd (00-124).
- The next CCB meeting is scheduled for May 15th (00-136).

TRMM SUBSYSTEM OPERATIONS

Attitude Control System (ACS)

Delta-V maneuver #182 was successfully conducted on 00-102 at 15:04:02z and 15:49:48z for durations of 32.000 and 20.875 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 36.8% and 38.4% (63.2% and 61.6% on time). The remaining fuel is 596.918 kg, and the final apogee and perigee height is 354.77 km x 347.47 km.

Delta-V maneuver #183 was successfully conducted on 00-104 at 15:51:30z and 16:37:15z for durations of 35.125 and 26.375 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 34.2% and 34.2% (65.8% and 65.8% on time). The remaining fuel is 595.479 kg, and the final apogee and perigee height is 354.89 km x 347.75 km.

The TRMM Daily EPV failed the 50 km continuity check at the nominal 20:00z propagation start time on 00-105. The standard procedure of temporarily widening the limits from 50 km to 300 km by uplinking a modified ACS System Table #85, was used and the new vector began propagating at 22:00z.

Delta-V maneuver #184 was successfully conducted on 00-106 at 15:04:34z and 15:50:20z for durations of 26.250 and 15.000 seconds respectively, using the ISP thrusters. The off-modulation of the -Pitch thruster (#6) for burn 1 and 2 was 33.9% and 27.5% (66.1% and 72.5% on time). The remaining fuel is 594.506 kg, and the final apogee and perigee height is 354.83 km x 347.55 km.

The ESA experienced Moon interference in quadrants 2 and 4 on 00-103 through 00-107. ACS performed nominally during the transitions between 3 and 4 head control.

Flight Data System (FDS)/Command & Data Handling (C&DH)

The frequency standard value is x'78A' with a current drift rate of -4.2 µs/hr. The UTCF is 31535996.846599 seconds with a current drift value of -944 µs.

EDAC multi-bit errors occurred on 00-106 at 22:58:35z and 00-107 at 11:25:34z.

Q-channel restarts occurred on 00-102 at 11:05:21z, 00-103 at 17:54:14z, 00-106 at 12:39:20z, and on 00-107 at 13:04:20z.

The flywheel dwell incremented on 00-104 at 12:22:00z and 17:17:00z; the current value is 290 (x'122').

Reaction Control Subsystem (RCS)

The RCS subsystem performed nominally during this period. See the ACS section for specific Delta-V information.

Power Subsystem

The Power subsystem is operating nominally.

Electrical Subsystem

The Electrical subsystem operated nominally during this period.

Thermal Subsystem

The Thermal subsystem operated nominally during this period.

Deployables Subsystem

The Deployables subsystem performed nominally during this period.

RF/Communications Subsystem

The RF/Communications subsystem performed nominally during this period.

SPACECRAFT INSTRUMENTS

CERES

On 00-101 at 17:09:01, the CERES Total Channel Sensor Temperature Control was disabled, which reduced the number of bridge balance resets to a normal amount. There have been periodic spikes in analog telemetry, which have lasted for only one packet update, and are believed to be caused by the noise that the instrument is experiencing.

An Internal Calibration was performed on 00-103 at 01:16:55z.

LIS

LIS performed nominally during this time period.

PR

PR performed nominally during this time period.

The list of Internal Calibration times over Australia in which PR was not radiating is below:

2000/101:12:07:00 - 12:12:05z
2000/101:20:12:25 - 20:13:56z
2000/102:19:00:25 - 19:02:34z
2000/103:11:18:45 - 11:22:16z
2000/103:17:49:07 - 17:51:21z
2000/104:18:11:40 - 18:13:47z
2000/105:17:00:18 - 17:02:30z
2000/106:09:19:53 - 09:22:45z
2000/106:17:22:54 - 17:25:01z
2000/107:16:11:52 - 16:14:02z

TMI

TMI performed nominally during this time period.

VIRS

VIRS performed nominally during this time period.

GROUND SYSTEM

The TPOCC system managers successfully installed an HP-UX patch on 00-104 on string 2. The patch is scheduled to be installed on strings 1 and 3 next week.

(ER #168): On 00-104 at 15:30z, power was removed from UPS-5 by building maintenance following testing which essentially resulted in the entire MOC being disabled. String one acquired about 5-7 minutes into the pass, while String 2 acquired at AOS. However it was not possible to transfer commanding to string 2 until the LTS was back up. After string 1 acquired on telemetry, commanding was verified and all data was recovered.

(ER #169): On 00-106 at 14:30z, building maintenance returned to the original UPS-5 configuration after installing an ordered part and power was again lost. The entire 14:37:30z pass was missed since there was no power in the MOC until about 14:55z. A new event was scheduled and a blind acquisition was performed and all data was recovered. This power loss was reported by maintenance as a possibility so building maintenance could repair the problem that was uncovered on 00-104. There have been no power problems since.

Event Reports

ER #168: UPS-5 Power Outages on DOY 103 (see Ground System section).
ER #169: UPS-5 Power Outages on DOY 105 (see Ground System section).

Generic Late Acquisition Reports (for TTRs 19639)

No new Generic Late Acquisitions occurred during this period.

New Anomaly

AR #80 - CERES Bridge Balance Resets due to Increased Noise Levels (see CERES section).

Recurring Open Anomalies

No Open Anomalies recurred during this period.

Prepared by:
Mark E. Fioravanti II
TRMM Systems Engineer

Approved by:
Lou Kurzmiller
FOT Manager